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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,514	12/20/2006	Kiyotaka Uchimoto	4035-0182PUS1	2661

2292 7590 05/14/2008
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EXAMINER	
PULLIAS, JESSE SCOTT	

ART UNIT	PAPER NUMBER
2626	

NOTIFICATION DATE	DELIVERY MODE
05/14/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No.	Applicant(s)	
	10/587,514	UCHIMOTO ET AL.	
	Examiner	Art Unit	
	JESSE S. PULLIAS	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *20 December 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 December 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *7/27/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1 and 8 are objected to because of the following informalities: "generating a text sentence in a target language different in a source language" is improper grammar. For the purposes of examination it will be interpreted to read "generating a text sentence in a target language different from a source language" Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 6, 7, 8, 13, and 14 are rejected under 35 U.S.C. 102(e) as being anticipated by Appleby (2005/0171757).

With respect to claims 1 and 8, Appleby discloses:

an input step in which one or more keywords in the source language are input via an input means **([0166],** sentence of the source language file to be translated is selected, the words being keywords since they are used in the translation process**)**;

a sentence pair extraction step in which a sentence pair extraction means extracts one or more sentence pairs each including at least one of the keywords from a parallel corpus database including partial correspondence information indicating correspondence between a word/phrase in the source language and a word/phrase in the target language in each sentence pair **([0167],** each surface structure is compared in turn with the input text. Each daughter node storing a word has to match a word in the source text string exactly, **[0169],** a matching surface and dependency structure is found, **Fig 8** shows an example of a sentence in a parallel corpus database including partial correspondence information in the connections**)**;

a keyword-related phrase storage step in which a target-language keyword-related phrase corresponding to each source-language keyword-related phrase is detected from the partial correspondence information of each sentence pair and stored in the form of a keyword-related phrase table in a storage means **(Fig 19a** shows translation components which are stored with correspondence information between the source and target language phrases, see also **[0176])**;

a text sentence candidate generation step in which a text candidate generation means assumes dependency relationships among keyword-related phrases in the target language described in the keyword-related phrase table and generates one or more target-language text sentence candidates **([0169]** the transfer (translation) between the source and target languages takes place at the level of the dependency structure, **[0171],** the target text is generated**)**;

and an output step in which at least one text sentence candidate is output from an output means **([0045]** target language text is generated, implying it is output on **[0039]** visual display unit 106**)**.

With respect to claims 6 and 13, Appleby discloses:

In the text sentence candidate generation step,

the text candidate generation means assumes dependency relationships among keyword-related phrases in the target language described in the keyword-related phrase table and generates one or more target-language text sentence candidates **([0045]** target dependency structure(D)**)**; and

a source-language text candidate generation means assumes dependency relationships among keyword-related phrases in the source language described in the keyword-related phrase table and generates one or more source-language text sentence candidate **([0045]** source dependency structure (C)**)**,

in the output step, at least one set of text sentences in the source and target languages is output from the output means **(Fig. 6)**.

With respect to claim 7 and 14, Appleby discloses after the text sentence candidate generation step, an evaluation step in which an evaluation means evaluates each text sentence candidate **([0169],** translation units are evaluated to find a matching structure),

wherein in the output step, at least one text sentence candidate is selected based on the evaluation and the selected text sentence candidate is output **([0170]**, the target surface structure determined from dependency structure and used to generate target sentence text **[0171]).**

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 2 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Appleby (2005/0171757) in view of Fukumochi et al. (5,321,607).

With respect to claims 2 and 9, Appleby discloses:

after the sentence pair extraction step, one of the several competing translations is selected **([0209])**, and a keyword-related phrase storage step in which a target-language keyword-related phrase corresponding to each source-language keyword-related phrase is detected from the partial correspondence information of each sentence pair and stored in the form of a keyword-related phrase table in a storage means wherein a keyword-related phrase in the target language corresponding to the selected keyword-related phrase in the source language is described in the keyword-related phrase table **(Fig 19a** show translation components which are stored with

correspondence information between the source and target language phrases, see also **[0176]**).

Appleby does not specifically mention if, in the sentence pair extraction step, two or more sentence pairs are extracted for a keyword input in the input step and if two or more different keyword-related phrases in the source language are detected from the partial correspondence information, then the detected two or more keyword-related phrases in the source language are presented to a user such that the user is allowed to select a keyword-related phrase from the presented two or more keyword-related phrases.

Fukumochi discloses a keyword-related **(Col 6 lines 31-34,** sentence is segmented into each morpheme string**)** phrase presentation step in which if, in the sentence pair extraction step, two or more sentence pairs are extracted for a keyword input in the input step **(Col 6 lines 58—5,** plurality of subtrees are extracted due to ambiguity, and **Col 7 lines 50-57,** each subtree is transformed to target language and sentence produced for each one**)** and if two or more different keyword-related phrases in the source language are detected from the ambiguity **(see above)**, then the detected two or more keyword-related phrases in the source language are presented to a user such that the user is allowed to select a keyword-related phrase from the presented two or more keyword-related phrases **(Col 9 lines 63-67,** partial translated sentence candidates are generate and the user is allowed to select one**)**.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Appleby by including a keyword-related phrase

presentation step in which if, in the sentence pair extraction step, two or more sentence pairs are extracted for a keyword input in the input step and if two or more different keyword-related phrases in the source language are detected from the partial correspondence information, then the detected two or more keyword-related phrases in the source language are presented to a user such that the user is allowed to select a keyword-related phrase from the presented two or more keyword-related phrases, wherein in the keyword-related phrase storage step, if the user selects a keyword-related phrase from the presented two or more keyword-related phrases, a keyword-related phrase in the target language corresponding to the selected keyword-related phrase in the source language is described in the keyword-related phrase table as taught by Fukumochi, in order to resolve disadvantages associated with ambiguity in an input sentence, as suggested by Fukumochi **(Col 1 lines 32-37).**

5. Claims 3 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Appleby (2005/0171757) in view of Fukumochi et al. (5,321,607), in further view of Sata et al. (5,608,623).

With respect to claims 3 and 10, Appleby discloses each time one keyword is input in the input step, the sentence pair extraction step and the keyword-related phrase storage step are performed **([0171],** target text generation is done by recursively traversing a target surface structure to extract the target text from the target surface head and daughter components, see also claim 1);

Fukumochi discloses a keyword-related phrase presentation step in which if, in the sentence pair extraction step, two or more sentence pairs are extracted for a keyword input in the input step and if two or more different keyword-related phrases in the source language are detected from the ambiguity then the detected two or more keyword-related phrases in the source language are presented to a user such that the user is allowed to select a keyword-related phrase from the presented two or more keyword-related phrases **(See claim 2)**.

Appleby and Fukumochi do not specifically mention a co-occurrence word extraction step in which one or more co-occurrence words which co-occur with the keyword in the sentence pair are extracted and the extracted one or more co-occurrence words are described in a co-occurrence word table.

Sata discloses a co-occurrence word extraction step in which one or more co-occurrence words which are extracted **(Abstract, lines 1-5)** and the extracted one or more co-occurrence words are described in a co-occurrence word table **(Abstract lines 4-5, Fig 8)**.

It would have been obvious to one of ordinary skill in the art to modify the invention of Appleby and Fukumochi by including a co-occurrence word extraction step as taught by Sata and using the keyword related presentation step disclosed by Fukumochi to present co-occurrence words for selection such that co-occurrence words are presented to a user such that the user can select one or more co-occurrence word from the co-occurrence words described in the co-occurrence word table in order to avoid a word of the highest frequency of use being simply adopted as its equivalent in

the second language even when there are a plurality of equivalents in the second language, making the translation meaningless or unnatural, as suggested by Sata **(Col 1 lines 40-45).**

Appleby, Fukumochi, and Sata do not specifically mention that if one or more co-occurrence words are selected by the user, the selected one or more co-occurrence words are input as new keywords in the input step, and the text sentence candidate generation step is performed after completion of inputting all keywords, but one skilled in the art at the time of the invention would have known to input the selected words as new keywords since the user is selecting them in the context of entering a word or phrase for translation, and including them would avoid the risks of meaningless or unnatural translations discussed above.

6. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Appleby (2005/0171757) in view of Tolin et al. (5,490,061).

With respect to claims 4 and 11, Appleby does not specifically mention in the sentence pair extraction step, at the beginning of the step, one or more morphemes are added to or subtracted from a keyword input in the input step or a keyword input in the input step is replaced with a similar word.

Tolin discloses one or more morphemes are added to or subtracted from a keyword input in the input step or a keyword input in the input step is replaced with a

similar word **(Abstract,** words are subjected to morphological word stripping, which replaces with the root word which is similar since it has the same meaning**).**

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the invention of Appleby by in the sentence pair extraction step, at the beginning of the step, one or more morphemes are added to or subtracted from a keyword input in the input step or a keyword input in the input step is replaced with a similar word as taught by Tolin, in order to reduce database size by only having to store root words in a dictionary, as suggested by Tolin **(Title and Abstract).**

7. Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Appleby (2005/0171757).

With respect to claims 5 and 12, Appleby discloses a text sentence is generated a target language by performing the sentence pair extraction step, the keyword-related phrase storage step, and the text sentence candidate generation step for each combination of source and target language; and in the output step, a text sentence candidate of one language is output **(See claim 1).**

Appleby does not specifically mention two or more languages are output.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the invention of Appleby to output two or more languages instead of one, since the translation device disclose by Appleby may be viewed as a "base device" upon which outputting two languages instead of one may be viewed as an

improvement; translation from one languages to two or more was a known technique at the time of the invention; and one of ordinary skill in the art would have recognized that applying the known technique of translating into two or more languages would have predictably resulted in two or more output translations which would have improved the invention by making it useful to a multilingual audience.

Conclusion

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

a. 6,622,123 Chanod et al. disclose translating with a collection of core sentences using substitution and expansion of new sentences in any available target language

b. 2003/0149686 Drissi et al. disclose a method for multilingual search that involves a translated synonym dictionary and inverted index between multiple languages

c. 6,345,244 Clark discloses dynamically aligning translations by extracted text from documents and linking source-target pairs

d. 6,278,967 Akers et al. disclose generating natural language translations through the use of domain specific dictionaries, grammar rules, and probability values

e. 5,867,811 O'Donoghue discloses using a bilingual database including aligned corpora for translation

f. 6,243,669 Horiguchi et al. disclose providing a syntactic analysis and data structure for translation knowledge in example based language translation

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jesse Pullias whose telephone number is 571/270-5135. The examiner can normally be reached on M-F 9:00 AM - 4:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571/272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571/270-6135.

3. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jesse S Pullias/
Examiner, Art Unit 2626

5/9/2008

/Talivaldis Ivars Smits/
Primary Examiner, Art Unit 2626